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DRAFT INSTALLATION RESTORATION PROGRAM PHASE 2 CONFIRMATION QUANTIFICATION STAGE 2 NAS FORT WORTH TX

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NAVAL AIR STATION FORT WORTH JRB CARSWELL FIELD TEXAS

ADMINISTRATIVE RECORD COVER SHEET

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INSTALLATION RESTORATION PROGRAM
PHASE II - CONFIRMATION/QUANTIFICATION
STAGE 2

DRAFT

CARSWELL AIR FORCE BASE, TEXAS
HEALTH AND SAFETY PLAN

HEADQUARTERS STRATEGIC AIR COMMAND
COMMAND SURGEON'S OFFICE (HQSAC/SGPB)

February 1990

PREPARED BY:
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USAF CONTRACT NO. F33615-87-D-4023, DELIVERY ORDER NO. 04
RADIAN CONTRACT NUMBER 227-005-04

IRP PROGRAM OFFICE (HSD/YAQI)
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1.0 INTRODUCTION

This document presents Health and Safety procedures for the work to be performed during IRP Phase II Stage 2 at Carswell Air Force Base (AFB) under Contract F33615-87-D-4023, Delivery Order No. 04 Modification 04. The purpose of these field activities is to complete investigations begun in the IRP Phase II Stage 2 project, as directed by the Schedule of Changes dated 4 December 1989. Field activities at Carswell AFB will include shallow monitor well and pump test well installation, ground-water sampling, soil borings and continuous core sampling, and surface water sampling.

This Health and Safety Plan provides instructions for the safe performance of these activities by Radian employees and their subcontractors. Changes or modifications to this plan will require the approval of the Radian Project Director.

2.0 FIELD ACTIVITIES AND KEY PERSONNEL

Phase II Stage 2 activities included in Modification 04 of the Carswell AFB IRP field program include:

- Monitor well installation using hollow stem auger;
- Development and sampling of monitor wells;
- Aquifer testing;
- Soil boring and sampling using hollow stem auger with CME continuous samplers;
- Collection of surface water samples; and
- Sample preparation and shipment to Radian analytical facilities.

2.1 Key Personnel

Radian and subcontractor personnel who are responsible for the safe conduct of this project are:

- Radian Contract Program Manager--N. H. Lund;
- Radian Program Manager--W. L. Boettner;
- Radian Project Director--L. N. French/D. L. Richmann;
- Radian Supervising Geologists--S. E. Fain/S. B. Blount;
- Drilling Subcontractor Supervisor--Not Determined.

2.2 Program Manager/Project Director Responsibilities

The Program Manager and Project Director have overall responsibility to ensure that the site Health and Safety program is implemented in accordance

with all applicable federal, state, and local requirements and Radian Corporation policy.

2.3 Radian Supervising Geologist Responsibilities

The Radian Supervising Geologist will ensure that the health and safety procedures described in this plan are followed. These procedures cover all on-site activities of Radian and direct subcontractor personnel. All participants in the field work will comply with Federal and State occupational safety and health regulations, 29 CFR 1910, and are responsible for complying with this plan.

Specific safety responsibilities of the supervising geologist include:

- Locating the support facilities in an uncontaminated area.
- Initiating contact with the base emergency response agencies (police, fire, medical), testing the emergency phone numbers to ensure their accuracy, and posting the numbers.
- Implementing the safety training as described in Section 5 of this plan.
- Observing site activities to ensure the proper use of personal protective equipment.
- Conducting daily safety review sessions with the drilling crew.
- Setting safe work schedules, considering required work levels and outside temperature.
- Ensuring that the field team observes the work zone and decontamination procedures as described in this plan.

- Ensuring that Radian safety equipment is maintained properly (respirators are cleaned after each day).

- Initiating corrective action for observed safety violations and reporting unsuccessful attempts to correct a violation to the Radian Project Director or Program Manager.

2.4 Drilling Subcontractor Supervisor Responsibilities

The Drilling Subcontractor Supervisor will be responsible for enforcing drilling crew compliance with the health and safety procedures presented in this plan. The Drilling Subcontractor Supervisor will initiate corrective action and, as appropriate, disciplinary and/or dismissal measures with any drilling crew member who does not comply with the plan, as directed by the Radian Supervising Geologist.

2.5 Field Team Responsibilities

The responsibilities of the field team members are:

- Read and understand this plan;

- Perform work safely;

- Report any unsafe conditions to their immediate supervisor; and

- Be aware and alert for signs and symptoms of exposure to site contaminants and adverse weather conditions (i.e., temperature extremes and wind chill).

3.0 FIELD ACTIVITIES/HAZARD ANALYSIS

The field activities to be conducted during this program will involve potential health and safety risks to field team members. An analysis of these potential hazards (associated with the activities presented in Section 2) are discussed individually in the following subsections.

The general types of hazards associated with this program are described below. A listing of specific suspected hazards by site is provided in Table 3-1. A summary of field activities, by site, is provided in Table 3-2.

Mechanical Hazards:	Cuts, contusions (bruises), being struck by or striking objects, or being caught between objects.
Electrical Hazards:	Possible excavation of buried cables and contact with overhead power lines during drilling. Electrical storms. Electrical shocks from field equipment (pumps, generators, etc.).
Chemical Hazards:	Field exposure to chemicals listed in Section 3.1 of this plan.
Fire Hazards:	Possible excavation of buried gas lines. Grass fires. Equipment fires.
Thermal Hazards:	Exposure to outside temperature extremes, especially heat stress when wearing protective clothing.
Acoustical Hazards:	Exposure to excessive noise during drilling operations involving hollow-stem augering.

TABLE 3-1. POTENTIAL HEALTH AND SAFETY HAZARDS, BY SITE

Hazard	Site							
	1	4	5	10	12	16	17	BSS*
Aromatic Hydrocarbons					X		X	X
Chlorinated Hydrocarbons	X	X	X	X	X	X	X	
Petroleum Products					X	X	X	X
Metals	X	X	X	X	X	X	X	
Ordnance				X				
Drilling Hazards		X	X			X	X	

*BSS = Base Service Station

TABLE 3-2. FIELD ACTIVITIES, BY SITE

Activity	Site							
	1	4	5	10	12	16	17	BSS*
Well Drilling		X	X			X	X	
Aquifer Testing		X						
Ground-Water Sampling	X	X	X	X	X	X	X	X
Surface Water Sampling			X					
Soil Boring		X	X					

*BSS = Base Service Station

Unexploded Ordinance: Unexploded ordinance is a very real concern during activities at any military installation. Site activities should be coordinated with the Explosive Ordinance Disposal detachment before beginning site work in area where buried ordinance is suspected.

3.1 Hazard Analysis: Hollow-Stem Auger Drilling

Hollow-stem auger drilling activities will potentially expose field personnel to the hazards listed below:

Chemical Hazards:

- Exposure to chemical contamination present in groundwater and soils. Suspected and confirmed chemical contamination presently includes:

  - aromatic hydrocarbon compounds,
  - chlorinated hydrocarbon compounds,
  - petroleum products, and
  - metals.

- Previous analysis indicates the presence of many of the above categories of chemicals. Specific chemical compounds found include:

  - trichloroethylene,
  - vinyl chloride,
  - tetrachloroethylene,
  - trans-1,2-dichloroethylene,
  - benzene, and
  - toluene.

Drilling personnel will also be exposed to exhaust fumes from the equipment operation.

Physical Hazards--Exposure to physical hazards associated with hollow-stem augering include the following:

- snapping cables,
- brush, equipment, or gas-main fires,
- being hit by equipment,
- becoming entwined in rotating tools,
- falling objects,
- drilling into buried utilities or waste ordnance,
- exposure to excessive noise, and
- exposure to extreme outside temperatures.

3.2 Hazard Analysis: Development and Sampling of Monitor Wells

During development and sampling of the monitor wells there is a potential for exposure to contaminated groundwater. The various types of chemical contaminants listed in Section 3.1 (Chemical Hazards) should be considered present during well development and sampling. Electrical pumping equipment, if used during development and sampling of the wells, also presents electrical shock hazards.

3.3 Hazard Analysis: Aquifer Testing

The greatest potential hazard associated with aquifer testing is possible exposure to contaminated groundwater. However, due to the nature of the test, this potential is limited. As described in Section 3.2 electrical shocks, associated with the use of electrical pumps and automatic gaging equipment, are also possible.

3.4 Hazard Analysis: Soil Boring and Sampling

This activity will be accomplished using the hollow-stem auger drilling technique and continuous core samplers. The potential hazards are the same as those listed in Section 3.1.

3.5 Hazard Analysis: Surface Water Sampling

Elevated concentrations of metals and some hazardous organic compounds are potentially present in the surface water of Farmers Branch, its tributary and the ponds that will be sampled. However, at the low levels anticipated there is little hazard associated with casual contact with the surface water.

3.6 Hazard Analysis: Sample Preparation and Shipment

After the samples have been collected in sampling jars, the samples must be preserved, as appropriate, and properly packaged to protect shipping personnel from potential exposure to contaminants and to ensure the samples' integrity. There is no particular hazard in performing the packaging operation, yet if this operation is not done properly, unsuspecting individuals could be exposed if the containers leak or break. Shipping procedures are described in detail in the Work Plan. Preservation of some water samples require the use of acids to adjust sample pH. Proper precautions must be taken to avoid contact with these reagents.

3.7 Other Hazards: Heat Stress, Hypothermia, and Frostbite

During field work conducted in warm conditions, the Radian Supervising Geologist must be alert for the signs and symptoms of heat stress. A hazard exists when individuals are required to work in warm temperatures while wearing impervious protective clothing. When the ambient air temperature at the site exceeds about 65 degrees Fahrenheit, heat stress may become a problem. When field activities are conducted during cold weather conditions

(below freezing ambient air temperature or high wind chill factor) the Radian Supervising Geologist must be alert for signs of hypothermia or frostbite.

4.0 SAFE WORK PRACTICES AND PERSONNEL PROTECTION

The following subsections describe procedures for safely performing the different tasks required at the sites included in this program. Based on the results of the hazards analysis of field activities summarized in the preceding section, activities at all sites can be safely conducted using either modified EPA level C or D personal protection. As defined for this project, EPA level C protection includes:

- Tyvek® coveralls,
- Hard hat,
- Safety glasses or splash goggles,
- Air purifying full- or half-face respirator (worn),
- Rubber boots, and
- Gloves.

EPA Level D protection includes:

- Long sleeve shirt and trousers,
- Hard hat,
- Safety glasses or splash goggles,
- Air purifying, full- or half-face respirator (carried),
- Rubber boots, and
- Gloves.

In addition, hearing protection is required during drilling operations and in any areas where aircraft engines pose a noise hazard.

Based on conditions encountered during previous field activities at the sites included in this program, it is unlikely that Level C protection will be required. However, depending on actual site conditions at the time of field activities, the Radian Supervising Geologist may increase required personnel protection to Level C, based on continuous monitoring of ambient concentrations of volatile organics with a portable analyzer. Some general guidelines that will be used are as follows:

- Disposable Tyvek® coveralls should be worn by drilling personnel who handle potentially contaminated auger flights and other parts of the downhole drilling equipment. Tyvek® coveralls should only be worn when there is a high probability of skin contact with contaminants. They should not be worn in the absence of splash or dust hazards. They contribute little in the way of skin protection against volatile organic chemicals and greatly increase the danger of heat injury. Heat stress monitoring will be increased when workers are wearing Tyvek® clothing.

- Chemical splash goggles or safety glasses with side shields should be worn at all times during field activities.

- PVC disposable gloves worn over butyl rubber or nitrile gloves will provide an extra measure of hand protection when handling contaminated soils and water samples.

- Respiratory protection will be worn during drilling and sampling activities that expose the field team to hazardous airborne materials. In cases where monitoring confirms that total organic vapors are present at greater than 5 ppm above background in the breathing zone, the Radian Supervising Geologist will require the use of respiratory protection.

- Hearing protection will be worn during operation of heavy equipment.

Personal protective equipment, for the prevention of personnel exposure to chemical hazards via inhalation and skin contact, and to reduce potential physical hazards, are described in the following subsections. An equipment supplies list, including personal protective equipment and vendors is appended (Attachment A).

4.1 Dermal Protection

Drilling operations may expose field team members to certain dermal hazards, should contaminated soil or groundwater come in contact with their skin or eyes. To reduce the risk of physical contact with hazardous materials:

- Disposable Tyvek® coveralls will be worn by the field team when handling wet drill cuttings or physically handling any of the drilling equipment (auger flights, etc.) that potentially have contacted the contaminated materials.

- Eye protection (safety glasses with side shields meeting ANCI std. 287.1) will be worn by all field team members during all drilling and sampling activities. Splash goggles will be worn during steam cleaning activity.

- Neoprene or PVC boots with steel toes will be worn by all field team members when contact with contaminated soils or standing water may occur. (Steel toed boots must be worn at all times by personnel working near drill rigs or other heavy equipment).

4.2 Respiratory Protection

The following guidelines will be in force regarding respiratory protection:

- Air purifying respirators fitted with combination organic vapor/High Efficiency Particulate (HEP) filter/cartridges will be worn when ambient air monitoring indicates a potential for exposure to volatile organic contaminants.

Approved Respirator

- MSA Comfo II Half Mask with GMA-H Cartridges or equiva lent

- MSA Ultratwin Full Mask with GMA-H Cartridges or equiva lent.

4.3 Hearing Protection

Since operations will be conducted near aircraft engines and jet taxi and maintenance areas, the noise level of these activities combined with that from the drilling rigs may result in a noise hazard. The field team must protect their hearing during drilling operations by wearing either or both of the devices listed below:

- E.A.R. brand foam ear plugs,
- Ear muffs.

4.4 Head Protection

Head protection will be worn by all employees at all times they are on site. The type of head protection selected for this project is a nonmetallic, impact resistant hard hat (Class B helmet).

5.0 PERSONNEL TRAINING

During drilling and sampling of the sites, Radian team members will be provided with and required to wear the recommended equipment. Personnel protective equipment required by the drilling subcontractor personnel will be the responsibility of the subcontractors' supervisor. The following paragraphs discuss training information for respiratory protection.

5.1 Respiratory Protection Training

Respirators will be provided to the field team by their respective firms. All personnel have or will be qualitatively fit tested with their personally assigned respirator as part of the OSHA Health and Safety Training. The team members will be expected to use these respirators properly, if required.

The half-face air purifying respirator, equipped with the proper cartridge, is capable of filtering certain gases, vapors, dusts, mists, fumes, and particulates out of inhaled air. This respirator does not provide oxygen and should not be used in oxygen deficient atmospheres or IDLH* conditions. The respirator will not provide adequate protection if the face seal is poor, and all male members of the field team will be required shave daily before wearing this respirator. It is a violation of OSHA regulations to wear a respirator with any facial hair that interferes with the face seal. Contact lenses are also prohibited when respiratory protection is required.

Respirators must fit properly to afford adequate protection. To ensure that a proper fit is obtained, fit testing is performed. The Radian Supervising Geologist will perform three types of fit tests at the start of field activities and will ensure that each Radian person is periodically checked for proper respirator fit. These tests are:

*IDLH = Immediately Dangerous to Life and Health.

- Negative pressure testing,
- Positive pressure testing, and
- Odor testing.

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5.2 Personal Hygiene Practices

The field team must pay strict attention to the hygiene requirements listed below to avoid ingesting or sustained dermal contact with any of the possible site contaminants:

- Never put anything in your mouth, including your fingers, while conducting field activities.

- All employees must wash their hands, forearms, face and neck before eating, drinking, smoking, or using the rest room. There will be no exceptions to this rule.

- At the end of the day, each employee will shower thoroughly.

6.0 EXPOSURE MONITORING PLAN

Employee exposure to site contaminants and physical hazards will be monitored during the site activities by using a combination of techniques:

- Organic vapor measurements using photoionization detector (PID) (HNu or comparable device);
- Air quality screening for total organic vapors and selected organic compounds using indicator colorimetric tubes (Draeger tubes); and
- Heat and cold stress monitoring will be conducted by the Radian Supervising Geologist through field observations and body temperature measurements.

6.1 Chemical Exposure Monitoring Plan

The Radian Supervising Geologist will monitor airborne levels of organic contaminants during all drilling activities (monitor well drilling and soil coring). Measurements will be taken in the borehole, over cuttings, and in the breathing zone for comparison with background levels. Monitoring for chemical exposure will include the following activities:

- Obtain a background organic vapor reading near the upwind boundary of the site, using a photoionization detector (PID);
- Monitor the ambient air in the vicinity of the drill rig with the PID continuously during drilling activities;
  - check borehole concentrations whenever the drill stem is broken to add new sections; and

- if borehole concentrations or concentrations over cuttings increase from background, immediately check breathing zone concentrations.

- Drilling operations will be suspended until respiratory protection requirements are reevaluated if the PID total organics measurement in the breathing zone increases by more than 5 ppm above background;

- Use Draeger "Polytest" tubes for backup of the PID in the event of malfunction and to verify PID total organic concentrations; and

- Use compound-specific Draeger tubes (benzene, trichloroethylene, tetrachloroethylene, vinyl chloride, and toluene) for on-site identification of organic contaminants.

6.2 Heat Stress Control and Monitoring Plan

Workers who wear protective clothing will be at increased risk of heat stress. The Radian Supervising Geologist should observe the field team at all times and be alert for the signs of heat illness.

- Make sure that the workers adhere to a work/rest schedule; and
- Everyone on site should replace lost fluids frequently.

6.2.1 Heat Stress Control

The Radian Supervising Geologist will set work and break schedules depending on how heavy the work load is and the outside temperature, in coordination with the drilling supervisor. Generally, workers conducting drilling activity in protective clothing need to break in the shade at least 10 minutes out of every hour during elevated temperatures. Rest time should also include fluid replacement with electrolytes (i.e., Gatorade or equivalent).

During conditions where the temperature, humidity, and solar radiation are high and the air movement is low, the following procedures should be followed whenever possible to prevent heat stress injury:

- Limit work activity periods to reduce the amount of heat the body produces.

- Workloads and/or duration of physical exertion should be less during the first days of exposure to heat and should be gradually increased to allow acclimatization.

- Schedule heavy work during the cooler periods of the day.

- Alternate work and rest periods in heat stress conditions; in moderately hot conditions, 5-minute rest periods in the shade alternating with 25-minute work periods in the sun may be desirable. Under severe conditions, the duration of rest periods should be increased.

- A heat stressed worker may lose up to a quart of water per hour. This loss must be replaced, or a rapid rise in body temperature will occur. In conditions of moderate heat, replace 5 to 7 quarts of water per worker per day. In severe conditions of heat stress, replace 9 to 13 quarts of water per worker per day.

6.2.2 Heat Stress Monitoring

The Radian Supervising Geologist should perform monitoring activities for heat stress when workers are using protective clothing in elevated temperatures. The heat stress monitoring plan includes:

- Measurement of worker heart rate (pulse beats 15 seconds x 4 or 30 seconds x 2);

- Measurement of body temperature with forehead fever strips; and

- Observation of the field team for signs and symptoms of heat stress which include:

  - pale, clammy skin progressing to hot, dry, and red skin,
  - profuse perspiration,
  - cramps,
  - headaches,
  - nausea, and
  - fainting.

The following criteria will be used to institute heat stress controls (increase resting breaks, stop work, etc.).

- Heart rate >110 bpm (beats per minute) at beginning of rest period; shorten next work cycle by one-third.

- Heart rate >90 bpm at 3 minutes into rest period; shorten next work cycle by one-third.

- Oral temperature >99.6°F at beginning of rest period; shorten next work cycle by one-third.

- Oral temperature >100.6°F at any time; remove impermeable clothing and begin rest period until temperature drops to 99.6°F.

6.3 Frostbite Control and Monitoring Program

During cold conditions, the Radian Supervising Geologist and members of the field team must be alert for the signs and symptoms of frostbite. Frostbite occurs when part of the body is affected by below freezing temperatures. The flow of blood to the affected area(s) stops, and skin cells may be

permanently damaged in severe cases. It is possible that sudden weather changes may occur during the scheduled field activities with freezing temperatures, high winds and wind chill factors. Frostbite could easily result if proper precautions are not taken. The symptoms of frostbite are hard, pale, cold skin that becomes red and painful when thawed out. Hands, feet, nose and ears are most susceptible.

To avoid frostbite, it is important to wear several layers of warm clothes under a windproof outer garment such as the Tyvek coverall. Also make sure that the face, hands, and feet are protected. These precautions are also effective for prevention of hypothermia which may occur under similar conditions.

If frostbite occurs:

- Get the victim medical attention as soon as possible;
- Provide shelter from wind and administer warm drinks;
- Cover frozen areas with additional clothing or blankets;
- Encourage gradual, gentle movement, but do not allow the person to walk if the feet are frozen;
- Do not use direct heat or rub the frostbitten area(s); and
- Do not put frostbitten areas under warm or hot water.

7.0 WORK ZONES AND DECONTAMINATION PROCEDURES

To minimize the transfer of possible hazardous substances from the site, contamination control procedures are needed. Contaminants must be removed from clothing, personnel, and equipment prior to relocation from a work zone. For drilling activities, a formal series of work zones, centering on the borehole and rig, will be established. These zones are described in the following subsections. For all other activities, the general sampling equipment and personal protection equipment decontamination procedures described in Section 7.2 will be followed. Decontamination will be fully completed prior to moving off site.

7.1 Work Zones

Prevention of exposure and spread of contamination will be controlled through establishment of work zones. Three work zones will be used in this project: 1) Exclusion Zone, 2) Decontamination Zone, and 3) Support Zone.

7.1.1 Exclusion Zone

The Exclusion Zone is the area where disturbance activities (monitor well installation or coring activity) are conducted and where contaminants and physical hazards may be present. Only properly trained individuals who are wearing appropriate personal protection equipment will be allowed to enter and work in this zone. The size of the Exclusion Zone will be established by the Radian Supervising Geologist based on site-specific conditions, but generally includes the area within a 25-foot radius of the drill site.

7.1.2 Decontamination Zone

The Decontamination Zone is a corridor which leads from the Exclusion Zone to the Support Zone. This corridor will contain wash buckets, solid waste disposal containers, brushes, and equipment drop tarps. All decontamination activities will occur in this area.

7.1.3 Support Zone

The Support Zone is the area where the field team will reside when not performing site work. This area is to be used for eating, equipment storage, and staging. It is extremely important to locate the Support Zone in an area that is known to be free of contamination and as far upwind from the drill site as practical (at least 50 feet).

7.2 Decontamination Procedures

Equipment Decontamination Procedures

Equipment (spades, bailers, shovels) must be decontaminated before they may be used at other sites. Usually, a water washing in a detergent solution followed by a potable water and distilled water rinse will be sufficient to remove contaminants. Occasionally, washing with methanol or other solvents may be required. Remember, some solvents are toxic or extremely flammable and should be used with caution.

Rig Decontamination Procedures

1. Use a high pressure water wash to remove site contaminants from the drill rig and associated equipment (auger flights).

2. Set up wooden pallets and lay flights down to wash with the high pressure water. Remember to wear splash goggles during this activity.

Personal Protective Equipment Decontamination Procedures

1. Remove outer gloves and dispose in trash container. Hard hats, safety glasses, and boots should be cleaned at the end of the day. Set up wash and rinse stations within the Decontamination Zone using detergent, potable water, and brushes.

2. Remove and dispose Tyvek®. Continue wearing boots, undergloves, and respirator.

3. Remove undergloves and respirator in the Support Zone.

4. Respirators must be disassembled and washed with detergent at the end of each work shift.

5. Disposable garments and spent respirator cartridges should be deposited in covered containers for eventual disposal.

8.0 EMERGENCY RESPONSE AND COMMUNICATION PLAN

The objective of the emergency response and communication plan is to ensure that the field team knows how to contact emergency help quickly. The Radian Supervising Geologist will determine how to access the base emergency response network by coordinating with the Air Force Point of Contact.

8.1 Emergency Medical Response

Before beginning site activities make sure that each field team member knows where the nearest emergency medical facility is and how to get there.

- Locate the closest telephone;
- Post the telephone number of the nearest ambulance service (private or military);
- Make sure that the field team is aware of the location of a first aid kit and eyewash; and
- The Radian Supervising Geologist should be prepared to handle minor injuries.

8.2 Fire Emergency Procedures

The threat of fire on this particular project is considered slight because any contaminated material will be aqueous or solid. Fire hazards will, however, exist in the following activities:

- Equipment refueling;
- High pressure water cleaning fuel storage and refueling activities;

- Any welding activities; and

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- Any solvents that are used in decontamination.

The Radian Supervising Geologist should check to see that each vehicle and drilling rig fire extinguisher is appropriate for the fire hazard presented by this project. Generally, Type A, B, C extinguishers are appropriate.

The field team should be prepared to fight small fires with extinguishers. In the event of a large fire, the field team should contact the base emergency number and report the fire.

The Radian Supervising Geologist will take the following action in the event of a fire:

- Notify all site personnel that a fire exists;
- Shutdown site activities;
- Account for all site workers; and
- Evacuate the site, if necessary.

9.0 RECORD KEEPING PROCEDURES

To document the safety and health program for the Carswell AFB investigation, the Radian Project Director will keep records of the following:

- Documents certifying that each member of the field team has completed an occupational medical examination.
- Documentation that each member of the field team has successfully completed at least 40 hours of health and safety training.
- Certification of the successful completion of fit testing for respirators.
- Signed certificates by the field team that they have read and understand the safety and health requirements contained in this plan.

ATTACHMENT A

Equipment Supplies List

ATTACHMENT A: EQUIPMENT SUPPLIES LIST

Item	Description	Part Number	Vendor
Respirators (Use: 1/project)	MSA half face Comfo II	479531	MSA 226 South Enterprise Corpus Christi, Texas 78405 800-672-2222
	MSA full face Ultratwin	471286	MSA 226 South Enterprise Corpus Christi, Texas 78405 800-672-2222
Tyvek Coveralls (Use:2/day)	Tyvek coverall, no boots, hood, or elastic	1681040-L 1681040-XL	Vallen Safety Supply 3913 Todd Lane Austin, Texas 78744 512-440-1919
Hand Protection (Use: 3/pr/wk)	Pioneer Nitrile gloves Disposable PVC undergloves	AF-18 2Y3512	Vallen Safety Supply Vallen Safety Supply
Foot Protection (Use: 1/project)	Neoprene rubber boots	MB924B10 steel toe, calf length	Valley Safety Supply
Head Protection (Use: 1/project)	Class B helmet (white)	302-WT	Vallen Safety Supply
Detector Tubes (Use: 1 bx/wk)	Draeger tubes - Benzene 0.5-10 - Trichloroethylene - Perchloroethylene - Vinyl Chloride - Toluene	 3-47S-128561 3-47S-128541 3-47S-126699 3-47S-128061 3-47S-128061	Scott Specialty Gases 3714 Lapas Drive Houston, Texas 77023 713-644-4820
Organic Vapor Analyzer (Use: 1/project)	Radian Equipment Supply (Contact David Ranum)		
Calibration Gases (Benzene 10 ppm in hydrocarbon free air)	Certified Working Standard Cylinder Size A (226 ft.^{3})		Scott Specialty Gases 3714 Lapas Drive Houston, Texas 77023 713-644-4820
Decontamination Supplies	Wash buckets (large) Bristle brushes Detergent	NA	Supermarkets

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